



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/822,774	03/30/2001	Jonathan Sobel	57983.000046	6976

7590

08/24/2006

Thomas E. Anderson
Hunton & Williams
Suite 1200
1900 K Street, N.W.
Washington, DC 20006

EXAMINER

NAHAR, QAMRUN

ART UNIT	PAPER NUMBER
2191	

DATE MAILED: 08/24/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/822,774

Applicant(s)

SOBEL ET AL.

Examiner

Qamrun Nahar

Art Unit

2191

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 June 2006.
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3,5-8 and 10-13 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1-3,5-8 and 10-13 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. This action is in response to the RCE filed on 06/29/2006.
2. The rejection under 35 U.S.C. 103(a) as being unpatentable over Piazza, US Patent No. 5,881,291 in view of McGuire et al., US Patent No. 6,598,186 to claims 1-3, 5-8 and 10-12 is moot in view of new ground(s) of rejection.
3. The rejection under 35 U.S.C. 103(a) as being unpatentable over Piazza, US Patent No. 5,881,291 in view of McGuire et al., US Patent No. 6,598,186 and further in view of Bak et al., US Patent No. 6,704,927 to claim 13 is moot in view of new ground(s) of rejection.
4. Claim 13 has been amended.
5. Claims 1-3, 5-8 and 10-13 are pending.

Response to Amendment

Specification

6. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required:

the limitation “at least one processor readable carrier” on line 5 of claim 11; and

the limitation “a signal embodied in a carrier wave” on lines 1-2 of claim 13.

Claim Objections

7. Claim 1 is objected to because of the following informalities: the ending period is missing. Appropriate correction is required.

Claim Rejections - 35 USC § 101

8. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

9. Claims 11 and 13 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Claim 11 recites “at least one processor readable carrier, and instruction carried on the at least one carrier” which is non-statutory as not being tangibly embodied in a manner so as to be executable.

Claim 13 recites “a signal embodied in a carrier wave” which is non-statutory as not being tangibly embodied in a manner so as to be executable.

The Office's current position is that claims involving signals encoded with functional descriptive material do not fall within any of the categories of patentable subject matter set forth in 35 U.S.C. § 101, and such claims are therefore ineligible for patent protection. *See* 1300 OG 142 (November 22, 2005), in particular, see Annex IV(c).

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Art Unit: 2191

11. Claims 1-3, 5-8 and 10-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Piazza (U.S. 5,881,291) (art of record) in view of Sakai (U.S. 6,113,650).

As Per Claim 1, Piazza teaches a compiler and compilation method for processing a source program in a programming language in the Scheme/Lisp family into a representation known as continuation-passing style (CPS) before generating object code, with optimization also being involved in the processing.. (E.g. see Abstract and associated text). In that Piazza discloses the method that covering the steps of:

“transforming a first program (E.g. see FIG. 1, source code 11 and associated text, i.e. Scheme programming language) having a first multi-tasking property (note that Scheme has been using continuations to simulate multitasking, E.g. see Applicant’s specification, page 17, lines 20-22), wherein the first multi-tasking property comprises a property relating to a preemptive multitasking model (E.g. see FIG. 2, test block 23 and associated text, i.e. a long-running “loop set”), into a data structure (E.g. see FIG. 1, standard CPS 15 and associated text);”.

“transforming the data structure to include an explicit multi-tasking transfer of control command (E.g. see FIG. 1, standard CPS 15 and associated text);”

“optimizing the data structure to reduce an amount of program state that is saved at a transfer of control (E.g. see FIG. 1, OPTIMIZATION 16 and associated text);” and

“generating a second program having a second multi-tasking property, wherein the second multi-tasking property comprises a property relating to a run-to-completion model. (E.g. see FIG. 2, test block 24, “convert-loop” and associated text, i.e. after conversion, the long running loop is no longer long but several small/short pieces, so each piece can be run within a

Art Unit: 2191

certain period of time interval, which can be considered as a “run-to-completion”), using the optimized data structure (E.g. see FIG. 1, GENERATE OBJECT CODE 12 and associated text).”

Piazza teaches a programming language in the Scheme/Lisp family. Piazza does not explicitly teach C/C++ program. Sakai teaches C/C++ program (“C program” in column 12, lines 17-22).

It would have been obvious to one having ordinary skill in the computer art at the time of the invention was made to modify the method disclosed by Piazza to include C/C++ program using the teaching of Sakai. The modification would be obvious because one of ordinary skill in the art would be motivated to optimize C/C++ program loops (Sakai, column 3, lines 40-58).

As per Claim 2, the rejection of claim 1 is incorporated and further Piazza teaches

“the data structure further comprises a syntax tree (E.g. see col. 1:45-46, CPS tree).”

As per Claim 3, the rejection of claim 2 is incorporated and further Piazza teaches

“the step of transforming the data structure to include an explicit multi-tasking transfer of control command further comprises: converting the syntax tree to a continuation-passing style (CPS).” (E.g. see FIG. 1, standard CPS 15 and associated text).

As per Claim 5, the rejection of claim 1 is incorporated and further Piazza teaches

“the first program having a first multi-tasking property operates using a first program language and the second program having a second multi-tasking property also operates using the first program language.” (E.g. see col. 1:39-55, which states “... the transformation or

Art Unit: 2191

conversion consists of adding an extra argument, a continuation, to each combination. ...”). It is inherent that the second program language is still the same as the first program language.

As per claims 6-8 and 10, are system claims corresponding to the method claims 1-5 and are rejected under the same reason set forth in connection of the rejection of claims 1-3 and 5 respectively. Further Piazza discloses computer system (E.g. see FIG. 3 and associated text; and col. 8:58 to col. 10:61).

As per claims 11-12, are article of manufacture and processor readable medium, which are in fact a product claim corresponding to the method claim 1 and are rejected under the same reason set forth in connection of the rejection of claim 1 respectively. (E.g. see col. 8:58 to col. 10:61).

12. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Piazza (U.S. 5,881,291) (art of record) in view of Sakai (U.S. 6,113,650), and further in view of Bak (U.S. 6,704,927).

As per Claim 13, is a product claim corresponding to the method claim 1 and are rejected under the same reason set forth in connection of the rejection of claim 1. The combination teaching of Piazza and Sakai does not explicitly disclose a signal embodied in a carrier wave. However, Bak teaches “a data signal embodied in a carrier wave” (E.g. see col. 11:16-20). It is a well-known practice. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Bak into the system of Piazza and Sakai, to have a data signal embodied in a carrier wave. The modification would have been

Art Unit: 2191

obvious because one of ordinary skill in the art would have been motivated to include this well-known practice in the product so that it can be used in various environments.

Response to Arguments

13. Applicant's arguments with respect to claims 1-3, 5-8 and 10-13 have been considered but are moot in view of the new ground(s) of rejection.

In the remarks, the applicant argues that:

a) Since claim 11 recites an article of manufacture and claim 13 recites a method, claims 11 and 13 contain statutory subject matter.

Examiner's response:

a) The Office's current position is that claims involving signals encoded with functional descriptive material do not fall within any of the categories of patentable subject matter set forth in 35 U.S.C. § 101, and such claims are therefore ineligible for patent protection. *See* 1300 OG 142 (November 22, 2005), in particular, see Annex IV(c).

Claim 11 recites "at least one processor readable carrier, and instruction carried on the at least one carrier" and claim 13 recites "a signal embodied in a carrier wave", which are non-statutory as not being *tangibly* embodied in a manner so as to be executable. That is, claims 11 and 13 still include a signal.

In addition, see the rejection above in paragraph 9 for rejection to claims 11 and 13.

In the remarks, the applicant argues that:

Art Unit: 2191

b) Furthermore, applicants respectfully point out that C/C++ was available at the time of Piazza, yet Piazza does not disclose that his compiler is usable with the C/C++ language. This in addition to applicants previously submitted remarks demonstrate that those skilled in the art recognize the associated difficulties in going from programming C/C++ to programming in Scheme and it is not an obvious matter to substitute one for the other.

Examiner's response:

b) The mere fact that Piazza does not teach C/C++ program does not indicate that Piazza is teaching away from C/C++ program. In addition, see the rejection above in paragraphs 11 and 12 for rejection to claims 1-3, 5-8 and 10-13.

Conclusion

14. Any inquiry concerning this communication from the examiner should be directed to Qamrun Nahar whose telephone number is (571) 272-3730. The examiner can normally be reached on Mondays through Fridays from 9:30 AM to 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wei Y Zhen, can be reached on (571) 272-3708. The fax phone number for the organization where this application or processing is assigned is (571) 273-8300.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the TC 2100 Group receptionist whose telephone number is 571-272-2100.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications

Art Unit: 2191

may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



QN
August 11, 2006


WEI ZHEN
ADVISORY PATENT EXAMINER